DATASHEET - FRCMM-16/4/003-A



Residual current circuit breaker (RCCB), 16A, 4p, 30mA, type A

Powering Business Worldwide

FRCMM-16/4/003-A Part no. 170285

Catalog No.

Alternate Catalog FRCMM-16/4/003-A

EL-Nummer

1666281

(Norway)

Similar to illustration

Delivery program			
Basic function			Residual current circuit-breakers
Number of poles			4 pole
Application			Switchgear for industrial and advanced commercial applications
Rated current	In	Α	16
Rated short-circuit strength	I _{cn}	kA	10 with back-up fuse
Rated fault current	$I_{\Delta N}$	Α	0.03
Туре			Type A
Tripping		s	non-delayed
Product range			FRCmM
Sensitivity			Pulse-current sensitive
Impulse withstand current			Partly surge-proof 250 A
Contact sequence			1 3 5 N H 2 4 6 N

Technical data

Electrical			
Types conform to			IEC/EN 61008
Current test marks			As per inscription
Tripping		s	non-delayed
Rated voltage according to IEC/EN 60947-2	U_n	V AC	240/415
Rated frequency	f	Hz	50/60
Limit values of the operating voltage			
Test circuit		V AC	184 - 440
Rated fault current	$I_{\Delta n}$	mA	30
Sensitivity			Pulse-current sensitive
Rated insulation voltage	Ui	V	440
Rated impulse withstand voltage	U _{imp}	kV	4 (1.2/50μs)
Rated short-circuit strength	I _{cn}	kA	10 with back-up fuse
Impulse withstand current			250 A (8/20 µs) surge-proof
Max. admissible back-up fuse			
Short-circuit	gG/gL	Α	63
Overload	gG/gL	Α	16
Rated making and breaking capacity / Rated residual making and breaking capacity	$I_m/I_{\Delta m}$	А	500
lifespan			
Electrical	Operations		≧ 4000
Mechanical	Operations		≧ 20000
Mechanical			
Standard front dimension		mm	45
Device height		mm	80
Built-in width		mm	70 (2TE)
Mounting			Quick attachment with 2 latch positions for DIN-rail IEC/EN 60715

Degree of Protection		IP40, IP54 (with moisture-proof enclosure)
Terminals top and bottom		Twin-purpose terminals
Terminal protection		Busbar tag shroud to BGV A3, ÖVE-EN 6
Terminal cross-section		
Solid	mm^2	1.5 - 35
Stranded	mm^2	2 x 16
Terminal cross-section		M5 (with cross-recessed screw as defined in EN ISO 4757-Z2, Pozidriv PZ2)
Tightening torque of fixing screws	N/m	2 - 2.4
Thickness of busbar material	mm	0.8 - 2
Admissible ambient temperature range	°C	-25 - +40
Permissible storage and transport temperatures	°C	-35 - +60
Climatic proofing		25-55°C/90-95% relative humidity according to IEC 60068-2
Mounting position		As required
Contact position indicator		red / green
Trip indication		white / blue

Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	16
Heat dissipation per pole, current-dependent	P _{vid}	W	0.725
Equipment heat dissipation, current-dependent	P _{vid}	W	2.9
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	40
			Starting at 40 °C, the max. permissible continuous current decreases by 3% for every 1 °C
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
10.2.2 Corrosion resistance			Meets the product standard's requirements.
10.2.3.1 Verification of thermal stability of enclosures			Meets the product standard's requirements.
10.2.3.2 Verification of resistance of insulating materials to normal heat			Meets the product standard's requirements.
10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects			Meets the product standard's requirements.
10.2.4 Resistance to ultra-violet (UV) radiation			Meets the product standard's requirements.
10.2.5 Lifting			Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact			Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions			Meets the product standard's requirements.
10.3 Degree of protection of ASSEMBLIES			Does not apply, since the entire switchgear needs to be evaluated.
10.4 Clearances and creepage distances			Meets the product standard's requirements.
10.5 Protection against electric shock			Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components			Does not apply, since the entire switchgear needs to be evaluated.
10.7 Internal electrical circuits and connections			Is the panel builder's responsibility.
10.8 Connections for external conductors			Is the panel builder's responsibility.
10.9 Insulation properties			
10.9.2 Power-frequency electric strength			Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage			Is the panel builder's responsibility.
10.9.4 Testing of enclosures made of insulating material			Is the panel builder's responsibility.
10.10 Temperature rise			The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.11 Short-circuit rating			Is the panel builder's responsibility. The specifications for the switch gear must be observed. $\label{eq:constraint}$
10.12 Electromagnetic compatibility			Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.13 Mechanical function			The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

Technical data ETIM 7.0

Circuit breakers and fuses (EG000020) / Residual current circuit breaker (RCCB) (EC000003)

Rectical sanianering, automation, process control engineering / Electrical installation device / Revisional current circuit breaker (RCCB) (ecilosis 10.1.7-14-2-01 (RAB990014)) Number of poles				
Rated voltage V 415 Rated current A 16 Rated fault current mA 30 Rated insulation voltage Ui V 440 Rated impulse withstand voltage Uimp kV 4 Mounting method C F DIN rail Leakage current type A A Selective protection No No Short-time delayed tripping No 10 Store current capacity (lcw) KA 10 Surge current capacity KA 0.25 Frequency Yes Yes Additional equipment possible Yes Yes With interlocking device Yes Yes Degree of protection (IP) Yes Yes With in number of modular spacings Mm 0.5 Built-in depth Mm 0.5 Ambient temperature during operating "C 25-40 Pollution degree Tone table conductor cross section multi-wired mm* 15-16		on, device / Resi	idual curi	rent protection system / Residual current circuit breaker (RCCB)
Rated current A 6 Rated fault current mA 30 Rated insulation voltage Uin V 440 Rated impulse withstand voltage Uimp kV 4 Mounting method IN rail IN rail Selective protection No No Short-time delayed tripping No No Short-circuit breaking capacity (Icw) KA 10 Surge current capacity KA 25 Frequency KA 25 Additional equipment possible Yes Yes With interlocking device Yes Yes Under the interpretation (IP) Yes Yes With in number of modular spacings Yes Yes Built-in depth Yes Yes Ambient temperature during operating Yes Yes Connectable conductor cross section multi-wired Yes Yes	Number of poles			4
Rated fault current Rated insulation voltage Ui Rated insulation voltage Uimp Rated impulse withstand voltage Uimp Rounting method Leakage current type Leakage current type Selective protection Short-time delayed tripping Short-circuit breaking capacity (Icw) Surge current capacity Frequency Additional equipment possible With interlocking device Degree of protection (IP) With interlocking device Degree of protection (IP) With in number of modular spacings With in number of modular spacings Built-in depth Ambient temperature during operating Short-circuit beginned to gerating Ambient temperature during operating Frequency Rounce connectable conductor cross section multi-wired Rounce Connectable Conne	Rated voltage		V	415
Rated insulation voltage Uim Rated impulse withstand voltage Uimp Rounting method Leakage current type Leakage current type Selective protection Short-time delayed tripping Short-circuit breaking capacity (lcw) Surge current capacity Frequency Additional equipment possible With interlocking device Degree of protection (IP) Width in number of modular spacings Built-in depth Ambient temperature during operating Ambient temperature during operating Rounting Marker Pollution degree Connectable conductor cross section multi-wired	Rated current		Α	16
Rated impulse withstand voltage Uimp Mounting method Leakage current type Selective protection Short-ime delayed tripping Short-circuit breaking capacity (Icw) Surge current capacity Frequency Additional equipment possible With interlocking device Degree of protection (IP) Width in number of modular spacings Built-in depth Ambient temperature during operating Ambient temperature during operating Frequency Rich in degree Pollution degree Connectable conductor cross section multi-wired Rich in marks Ric	Rated fault current		mA	30
Mounting method Leakage current type Selective protection Short-time delayed tripping Short-circuit breaking capacity (Icw) Surge current capacity Frequency Additional equipment possible With interlocking device Degree of protection (IP) Width in number of modular spacings Built-in depth Ambient temperature during operating Mounting method Mounting method Mounting method Mounting method Mounting method Mounting Mexica DIN rail Adv Adv No No No Surge current capacity (Icw) Surge current capacity (Icw) Surge current capacity Frequency So/660 Hz Yes With interlocking device Pegree of protection (IP) Width in number of modular spacings Mounting Mexica Mounting Mexica Mounting Mexica Pollution degree Connectable conductor cross section multi-wired Mounting Mexica Distribution degree Connectable conductor cross section multi-wired DIN rail Adv Adv Adv No No Pollotion degree Distribution Mexica Distributio	Rated insulation voltage Ui		V	440
Leakage current type Selective protection Short-time delayed tripping Short-circuit breaking capacity (Icw) Short-circuit breaking capacity (Icw) Surge current capacity Frequency Additional equipment possible With interlocking device With interlocking device Degree of protection (IP) Width in number of modular spacings Built-in depth Ambient temperature during operating Pollution degree Connectable conductor cross section multi-wired Manage Current type A A No No No 10 25 48 25 48 25 48 26 27 28 48 48 48 48 48 48 48 48 48	Rated impulse withstand voltage Uimp		kV	4
Selective protection Short-time delayed tripping Short-circuit breaking capacity (Icw) Surge current capacity Frequency Additional equipment possible With interlocking device Degree of protection (IP) Width in number of modular spacings Built-in depth Ambient temperature during operating Pollution degree Connectable conductor cross section multi-wired No Degree of mark No Degree of protection multi-wired No Degree of protection for the mark No Degree of protection (IP) Degree of protection (IP) Degree of protection for the mark No Degree of protection for the	Mounting method			DIN rail
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Short-circuit breaking capacity (Icw) Surge current capacity Frequency Additional equipment possible With interlocking device Degree of protection (IP) Width in number of modular spacings Built-in depth Ambient temperature during operating Pollution degree Connectable conductor cross section multi-wired KA 10 10 10 12 18 18 18 19 19 19 19 19 19 19	Selective protection			No
Surge current capacity Frequency Additional equipment possible With interlocking device Degree of protection (IP) Width in number of modular spacings Built-in depth Ambient temperature during operating Pollution degree Connectable conductor cross section multi-wired KA D.25 Ves Ves Ves Ves Ves 4 Co.25 Ves Ves Ves Polo	Short-time delayed tripping			No
Frequency Additional equipment possible With interlocking device Degree of protection (IP) Width in number of modular spacings Built-in depth Ambient temperature during operating Pollution degree Connectable conductor cross section multi-wired Pollution of modular spacings To Si/60 Hz Pols	Short-circuit breaking capacity (Icw)		kA	10
Additional equipment possible With interlocking device Degree of protection (IP) Width in number of modular spacings Wiltin depth Ambient temperature during operating Pollution degree Connectable conductor cross section multi-wired Width in number of modular spacings mm Vec	Surge current capacity		kA	0.25
With interlocking device Degree of protection (IP) Width in number of modular spacings Built-in depth Ambient temperature during operating Pollution degree Pollution degree Connectable conductor cross section multi-wired Pollution degree Temperature during operating mm² 15 - 16	Frequency			50/60 Hz
Degree of protection (IP) Width in number of modular spacings Built-in depth Ambient temperature during operating Pollution degree Connectable conductor cross section multi-wired Polycopy (Polycopy) IP20 Polycopy Ambient temperature during operating Polycopy	Additional equipment possible			Yes
Width in number of modular spacings Built-in depth Ambient temperature during operating Pollution degree Connectable conductor cross section multi-wired Pollution degree The section of the sectio	With interlocking device			Yes
Built-in depth mm 70.5 Ambient temperature during operating °C 25 - 40 Pollution degree mm² 25 - 16	Degree of protection (IP)			IP20
Ambient temperature during operating Pollution degree Connectable conductor cross section multi-wired Pollution degree mm² 1.5 - 16	Width in number of modular spacings			4
Pollution degree 2 Connectable conductor cross section multi-wired mm² 1.5 - 16	Built-in depth		mm	70.5
Connectable conductor cross section multi-wired mm ² 1.5 - 16	Ambient temperature during operating		°C	-25 - 40
	Pollution degree			2
Connectable conductor cross section solid-core mm ² 1.5 - 35	Connectable conductor cross section multi-wired		mm²	1.5 - 16
	Connectable conductor cross section solid-core		mm²	1.5 - 35

Dimensions

